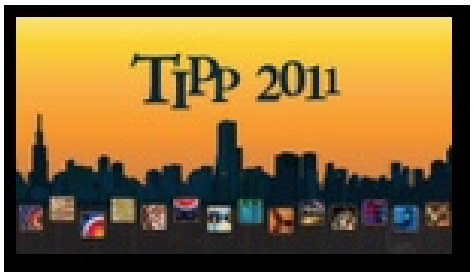

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Measurement of the longitudinal coordinate in Mu2e straws using time division

Straw tracking chambers are capable of producing very good momentum resolution. Proposed Mu2e experiment at Fermilab will use a straw tracker to measure electrons with a momentum around 100 MeV. In this project, we find the electron's position along the length of a straw by time division using one preamplifier on each end of the straw. High gain ultra low noise RF transistors are used in the preamplifier. The Straw that is used for this analysis has 5 mm diameter and is filled with gaseous mixture of 80% Argon and 20% Carbon Dioxide at 1 atm pressure. To estimate the position resolution along the straw, we use X-rays from Fe-55 source and then cosmic ray muons. The resolution of about 5 cm is expected.

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Track Classification: Gaseous Detectors